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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,334	08/25/2000	Tadashi Hayakawa	P19929	4037

7055 7590 03/24/2005

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 RESTON, VA 20191

EXAMINER
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FOSTER, ROLAND G

ART UNIT	PAPER NUMBER
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2645

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/645,334

Applicant(s)

HAYAKAWA, TADASHI

Examiner

Roland G. Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 3-5, 10, 13, 15, 17, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 11, 12 and 16 is/are rejected.
- 7) ☒ Claim(s) 2, 6-9, 14 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/27/00 & 12/04/0.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Invention I (comprising claims 1, 2, 6-9, 11, 12, 14, 16 and 18) in the reply filed on Feb. 11, 2005 is acknowledged.

The traversal is on the ground(s) that the "claims of both Inventions are directed to a method or apparatus for detecting the position of a mobile station." Thus, the applicant argues that the fields of search for Inventions I and II "will be largely coextensive or significantly overlap, and therefore there will not be a serious burden on the Examiner to search and examine the entire application."

Although the applicant's arguments have been fully considered, they are not deemed persuasive. As indicated on pages 3 and 4 of the prior restriction requirement, mailed on Jan. 13, 2005 (the "Restriction Requirement"), Inventions I and II are indeed subcombinations of a "single system for detecting position based information of a mobile terminal." Complex technological systems such as mobile telephones often comprise complex subsystems (subcombinations) that, while having overlapping fields of search, also embrace divergent subject matter, fields of search, and classifications. The examiner presented specific arguments on pages 2-4 of the Restriction Requirement as to why the instant mobile terminal subcombinations embraced divergent subject matter, fields of search, and classification, and thus caused administrative burden to search and examine at one time. The applicant did not address

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the examiner's specific arguments. Thus, both public and the Office have not been provided notice as to what was specifically incorrect with the examiner's administrative burden rationale.

The examiner's Restriction Requirement is also consistent with the Lack of Unity holding set forth by the European Patent Office ("EPO") against the applicant's corresponding EPO application. Specifically, the EPO identified the same groupings of claims in their EPO search report (of record as cited by the applicant). Further, the EPO stated that the "only common concept linking together the two groups of independent claims...is that a distance between a mobile station and a base station is measured", which the EPO considered not to be novel. Thus, the EPO holding of lack of unity is consistent with the examiner present restriction requirement in that the subcombinations are quite divergent and thus burdensome to search, only being linked by single concept lacking novelty.

Thus, the requirement is still deemed proper and is therefore made FINAL.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 11, 12, and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 5 of U.S. Patent No. 6,373,434 B1 (Hayakawa). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject claims are broader than the claims of the Hayakawa patent. Specifically, the subject claims are missing the narrower limitations directed to CDMA and the increased specificity of the phase difference measuring procedures as set forth in the Hayakawa patent. It would have been obvious to remove limitations from a claim in order to obtain increased claim scope.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11, 12, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,357,609 ("Spencer"), of record as cited by the applicant and as applied in EPO search report for the corresponding EPO application.

With respect to claim 1, see the following paragraphs for details on how Spencer reads upon the claimed limitations.

Spencer discloses transmitting a periodical signal (col. 3, lines 20-35) from a ground (base) station 10 (Fig. 1) to a mobile terminal (Fig. 2) using radio frequency ("RF") broadcasting via transmit antenna 18. The periodical signal has a period provided by (synchronous with) a stabilized oscillator clock 11 (reference timer) (col. 3, lines 20-35).

Spencer clearly discloses transmitting another periodical signal from a mobile terminal to the base station including limitations similar to the limitations discussed above but merely applied to transmission in the opposite direction synchronous with clock 23 (e.g., see the abstract and col. 3, line 64 – col. 4, line 15).

Spencer discloses receiving the periodic signal at the mobile station (Fig. 2) and transmitted from the base station (Fig. 1). The periodic signal comprises a tracking clock signal derived from clock 11, which is compared with the phase of the reference clock 12 (col. 5, lines 3-12), thus indicating a time duration from clock 12 (second reference timing) to the received timing (tracking signal comprising clock 11).

In view of the limitations discussed above, Spencer clearly discloses receiving the periodic signal at the base station including limitations similar to the limitations discussed above but merely applied to calculating the phase difference at the signal received at base station, thus

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indicating a time duration from clock 11 (first reference timing) to the received timing (tracking signal comprising clock 12) (e.g., see col. 4, lines 36-52).

Spencer discloses calculating range information M1 at the base station, based on detected phase difference (col. 4, lines 40-47) and the range information M2 at the mobile station, also based on detected phase difference (col. 5, lines 1-15). Range information M2 is sent from remote (mobile) terminal to the ground (base) station (col. 4, lines 48-53). As a result, the true offset between reference clocks, or " $\Delta T$ " (63) (reference timing difference) can be calculated (e.g., according to the equation  $2 \Delta T = M1 - M2$ ).

Spencer clearly discloses matching the reference timer of the mobile station with the reference timer of the base station based on the timing difference  $\Delta T$  (col. 6, lines 16-29).

As discussed above, both M1 and M2 are distance (range) measurements based on detected phase differences, which can be used in turn to calculate true range (distance) between stations (abstract and col. 5, line 56 – col. 6, line 2 and col. 6, lines 41-45).

Claim 11 differs substantively from claim 1 in that claim 11 recites a mobile terminal means performing functions equivalent to those method steps of claim 1. Note that the mobile terminal obtains the distance measurement M2, which reflects the distance between the base and mobile terminals (uncorrected for true offset, atmospheric anomalies, plus equipment delays)

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also as discussed in the claim 1 rejection (see also col. 5, lines 56-65). Therefore, see the claim 1 rejection for further details.

Claim 12 differs substantively from claim 1 in that claim 12 recites a base station means performing functions equivalent to those method steps of claim 1. Therefore, see the claim 12 rejection for further details.

Claim 16 differs substantively from claim 1 in that claim 16 recites a vehicle-mounted apparatus performing functions equivalent to those method steps of claim 1. Note that although claim 16 recites a vehicle-mounted apparatus, claim 16 also still recites a base station. Thus, see the claim 1 rejection for further details, where the vehicle mounted parts of the apparatus read on the mobile terminal, and the base station parts are similarly recited. Note that vehicle is interpreted according to its reasonably broad meaning to mean a means of carrying or transporting something. Thus, vehicle reads on the mobile terminal of claim 1, which is mounted on an airplane (vehicle).

***Allowable Subject Matter***

Claims 2, 6-9, 14, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



***Examiner's Reasons for Indicating Allowable Subject Matter***

Claim 2 is directed to detecting a distance between the mobile station and each of at least three base stations. Note that a system using at least two base stations would be outside the expressly worded scope of the claims.

Spencer discloses that the method may be extended to multiple remote (mobile) stations (col. 6, lines 11-15) but fails to contemplate extending the method to at least two, much less three base stations.

Claims 6, 14, and 18 are directed to a communication period of the measuring signal determined based on at least the following methods: an allowable error in measuring the distance, a distance resolution in measuring the distance, and relative velocity information there between.

Spencer fails to disclose determining the communication period according to such a detailed list of methods.

The remaining prior art of record fails to teach or fairly suggest the obviousness of substantially modifying Spencer in order to arrive at the invention as claimed in detail by the applicant.

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The above reasons for allowance are based on the claims as presently set forth in their totality. The above reasons for allowance should not be interpreted as indicating that amended claims broadly reciting certain limitations discussed in the above reasons for allowance would be allowable. A more detailed reasons for allowance may be set forth in a subsequent Notice of Allowance if and when all claims in the application are put into a condition for allowance.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roland G. Foster whose telephone number is (703) 305-1491. The examiner can normally be reached on Mon to Fri from 9:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (703) 305-4895. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roland G. Foster  
Primary Patent Examiner  
March 19, 2005